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The goddess surely must have been in haste,
 Like Daphne fleeing when Apollo chased,
 And leaving here her slipper by the way,
 Intends to find it on another day.

And will she come to seek it here or no?
 The day is lengthening but I cannot go,
 Until I see her bring the absent mate
 Of this rare beauty, though the time is late.

I watch, but still no classic form I see,
 Naught but the slipper 'neath the forest tree;
 And so, for fear of some purloining elf,
 The precious relic I secure myself.

ZOOLOGY.

NEW BIRDS IN SOUTHERN ILLINOIS.—In the summer of 1871 the following species were noticed, and two of them obtained, by the writer, in Richland and Wabash Counties, in the south-eastern portion of Illinois, about latitude 38° , $25'$:—*Vireo Bellii*, *Peuceea æstivalis*, *Cyanospiza ciris*, *Asturina plagiata* and *Fulco Mexicanus*. The *Vireo Bellii* was found to be a common, or at least not rare, species in the thickets on the prairies. It was first seen on the 8th of June, when specimens were shot, and being then in full song, there can be little doubt that the species breeds there. The *Peuceea æstivalis*—a bird heretofore found only in South Carolina, Georgia, Florida, etc.—was found to be a common species in Wabash County, in old fields bordering on road-sides. As specimens of both old and young were obtained (on the 11th and 14th of August), and the former being in full song throughout the summer, there can be no doubt that the species breeds there. *Cyanospiza ciris* was seen only once—on the 10th of June—when it was observed in Wabash County, in an open thicket in the corner of an old weedy field. As the locality was not visited again, it is possible that the species may have been nesting there. *Asturina plagiata* was seen, and twice shot at, on the 19th of August, 1871, on Fox prairie, in Richland Co. I came across it while hunting Swallow-tailed and Mississippi kites (*Nauclerus forficatus* and *Ictinia Mississippensis*), and while being annoyed by several of the latter, was well seen—it being immediately overhead—and shot at; it was afterwards followed a long distance among the trees which grew in a ravine intersecting the prairie, but finally lost. There can not be the slightest doubt as to the proper identification of the species, which I have been well acquainted with for years, and one which

could not be mistaken upon such close observation of it as that allowed for the individual in question. *Falco Mexicanus* (= *polyagrus* Cassin) was seen near Mt. Carmel, on the 27th of September, and near Bridgeport in July, 1871. This species has been observed, and also obtained, once before in Illinois, but in the northwestern portion, at Rock Island, by Mr. J. D. Sargent. The others are all new to the fauna of the state.—ROBERT RIDGWAY.

THE ANÆSTHETIC SCHOOL.—Prof. Cope remarked at the meeting of the Philadelphia Academy on May 21, that there were, and had been for years, two schools of naturalists, whose modes of treating Natural History subjects were quite different. In reference to these modes they might be called the *technical* and *natural* schools. As, however, the claim of the latter to better appreciation of natural affinities and classification, appeared to him to be doubtful, he thought they had better be called the *pseudo-natural* school, while the so-called technical naturalists were such, on account of their pursuing an analytic method. The pseudo-natural school decided on the affinities of organic types by their “physiognomy” or their *facies*, *habit* and “*toute ensemble*,” reading nature with an artist’s eye, and attaining opinions of systems, without the trouble of much anatomical study. They protested against the strict adhesion to “technical” (or structural) characters, saying that they violate “natural affinities” oftener than they support or express them. Thus their systems become physiognomical, and please the eye by their appearance, rather than the mind by their expression of exact structural relations. In accordance with this system, species were always well distinguished and could not have been derived from common parents, but that nevertheless everything “runs together,” and that the higher groupings are mainly “opinionative.” In fact, that although nature has a beautiful system we do not yet understand it, and that it is “too soon to generalize.” Perhaps this obscurity has its advantages, as it certainly shelters in its profundities any theory of creation its supporters may choose to adopt. Hence they might be called the *Anæsthetic* school, or *anæsthesiasts* (or ἀναισθησις). The *unnatural* school think that the way of determining the origin and relations of an object is to ascertain of what it is composed. This was to be accomplished by analysis of all its appearances and an account taken of every character. In this way the

structure is learned and a system based on anatomy is established. As anatomical systems are unnatural, and anatomical characters very difficult to discover by the anæsthesiasts, they regard such systems with disfavor, although they may constitute the only correct classification of bones, teeth, brains, etc. The analysts even find that species having very close specific relationships occasionally present different generic characters. This was proof positive to the anæsthesiast of the errors of the technical school. But it was still less to their credit that they laid stress on variations and monstrosities, which were mere accidents. The fact that the analyzers believed in the development of species, showed their systems to be unnatural. The speaker did not take sides, but observed that in order to learn the relations of a species, he usually examined it first.

MICROLEPIDOPTERA.—I have read with much interest Lord Walsingham's paper in the May number of the *NATURALIST*; and as I have given a good deal of attention to the *Tineina* and have received several letters recently as to collecting them, I wish to add a short note to Lord Walsingham's paper.

When one is at home or at a stationary camp, infinitely the best plan is to rear them from the larvæ and this is especially true of the leaf mining species. With such species as leave the mine to pupate, it is best to have a little moistened sand at the bottom of the wide mouthed bottle used as a breeding cage.

I have never found that the muscles were rendered rigid by the use of chloroform for killing the insect, as suggested by Lord Walsingham, but I have found that the positions of the wings and palpi are so variable when the insect is killed by chloroform that they can not be safely used as generic characters.

As the slightest denudation frequently renders the identification of minute species impossible, and it is exceedingly difficult to set them without some slight denudation, I do not attempt to set the smaller species (*Lithocolletidæ*, *Nepticulæ*, etc.). For such species I use the ordinary "deep cell" of a microscopic slide (small and shallow pill boxes will answer as well) laying a small piece of cotton or cotton wool on the bottom and covering the pill box with its top, or the cell with the ordinary glass cover held down by a small gum-elastic band. For observation under the lens I hold them in a small forceps by the legs.

For long collecting trips extensive preparations such as are described by Lord Walsingham are necessary. But for a morning's work about home it will be found convenient to take a wide-mouthed one ounce vial, a vial of chloroform, and a small paper box, say two inches square by one-half of an inch deep, with a piece of cottonbatting fitting into the bottom and another into the top of it. Loosen the stopper of the wide-mouthed vial, and put one or two drops of chloroform on it so that the fumes will fill the vial and then tighten the stopper again. When you find the microlepidopteron resting upon a fence, or the trunk or leaf of a tree, remove the stopper and invert the vial over the insect; it will spring back into the vial and in a moment will be quiescent; it may then be removed to the paper box (between the two pieces of batting, which will hold it steady and prevent it from getting rubbed). A drop or two of chloroform in the box will complete the work. The box may be carried safely in the vest pocket and the insects set upon return home.

Lord Walsingham says nothing about collecting from fences, etc., and recommends the late hours of the day as best for net-collecting. But for collecting with the vial as above described I have found the later morning hours, say from ten to one o'clock, the best and the trunks and fences the best localities. Out of at least one hundred and fifty species of *Tineina* which I have found here, fully three-fourths have been taken resting upon the leeward side of a board fence not two hundred yards long, at Linden Grove Cemetery at this place.—V. T. CHAMBERS, *Covington, Ky.*

ON THE OCCURRENCE OF A NEAR RELATIVE OF *ÆGIOTHUS FLAVIROSTRIS*, AT WALTHAM, MASSACHUSETTS.—Mr. Wm. Brewster, of Cambridge, Mass., some time since transmitted to the Smithsonian Institution, a specimen of a species of *Ægiothus* which heretofore has not been noticed as occurring on this continent. It was obtained Nov. 1st, 1870, from a flock of the common *Æ. linarius*, of which six specimens were also killed at the same shot. The specimen in question agrees most closely with females of *Æ. flavirostris*, a European species; but differs in some very essential respects, the most important of which is a tinge of sulphur-yellow in some places instead of tawny buff, which reminds one, at first sight, of the *Chrysomitris pinus*; the tail is also shorter than in *Æ. flavirostris* proper. From the two common North American

species (*Æ. linarius*, = *fuscescens*, *rostratus* and *Holbölli*; and *Æ. exilipes*, = *Æ. canescens*, of which this is the smaller southern race) it differs in lacking the red pileum, and in the total absence of the dusky gular spot; besides in many other minor respects. The adult male of true *Æ. flavirostris* has the rump rosy, but has no crimson on the crown; and has the primaries and rectrices conspicuously edged with white. In view of the total differences from *Æ. linarius* and *exilipes*—in all the numerous stages of plumage—and taking into account its close resemblance to the female of *Æ. flavirostris*, it seems reasonable to place this specimen near that species; while at the same time, the features in which it does not correspond with the latter are sufficiently important to warrant our characterizing it as a different race which, perhaps, represents the true *flavirostris* on our Continent; we accordingly name it *Ægiotus (flavirostris* var.) *Brewsterii*; under which name it is noticed in Professor Baird's new work on North American Birds, now in press.—ROBERT RIDGWAY.

A SPIKE-HORN MULEDEER.—Prof. Cope, at a meeting of the Academy of Natural Sciences, May 21, called attention to the anterior curvature of the axis of the horn in the common deer, *Cariacus Virginianus*, and said it was a point of interest to determine whether the true axis or beam, was curved forwards or not. On comparison with the *Cariacus macrotis* of the Plains, it was found that the true beam was partly erect and was branched (as already shown by Baird), while an anterior snag was directed forwards, marking exactly the curved line of the axis of the *C. Virginianus*. The curvature of the latter was then shown to be due to the predominant development of this large anterior snag, and the partial suppression of the true beam. He then exhibited a spike, or second year's horn of the *C. Virginianus*, and alluded to the occasional occurrence of permanent spike-horned deer in the Adirondack region of New York. He said Alexander B. Lamberton, a gentleman who had spent much time in that region, confirmed the statements that had been made as to their existence, but said that they were rare. He then exhibited a pair of simple beams, or spikes, of two feet and a half in length, which had been taken from a black-tailed deer (*C. macrotis*), shot within three miles of the Kansas Pacific Railroad, in Kansas. They had evidently belonged to an adult animal, and were the first examples

of spike-horned deer of that species which had been recorded. It was obtained by Dr. J. H. Janeway.

ECONOMICAL ENTOMOLOGY.—The plant lice affecting the vines to such a fearful extent in France, and which in this country have already done considerable damage, is still attracting much attention. The French Academy, as we learn from the “*Revue Scientifique*,” has offered a prize of twenty thousand francs to encourage studies to ascertain a remedy which shall protect the vine without destroying it. The best remedy against the *Phylloxera*, as it is called, is the use of phenic acid, a substance much like carbolic acid. The French Government has always been alert and liberal in this matter of practical entomology, a subject more important to agriculture than dreamed of in this country, where it is estimated that we lose hundreds of millions of dollars annually from the attacks of injurious insects, etc. Two states in the Union—Illinois and Missouri have salaried officers, who, with a good knowledge of entomology, do much by spreading facts about noxious and beneficial insects among the people. But the leading agriculturists of other states practically, with one or two exceptions, ignore the matter. During the past summer the losses of wheat, corn, and other crops in the Western States have been enormous. The farmers in one county in Massachusetts have lost at least fifteen thousand dollars’ worth of onions, their most valuable crop, next to hay, from the attacks of a minute insect, called Thrips. This annual loss, much of which could be now prevented, will accumulate in intensity, and be most grievous a century hence, when our country will become more densely populated and every grain of food will be needed.

The foresight of the French people, despite the present gloomy views of the “*Revue Scientifique*” and “*France Scientifique*” over the decadence of science among them, is conspicuous in their prompt and scientific treatment of the silk worm disease. Pasteur and Quatrefages, and others whose names are illustrious as investigators, have been commissioned to study the causes of this disease; and it is now thought, following out the suggestion of Pasteur — the result of profound studies on this subject — that if healthy eggs be selected and those infested with the parasitic fungus be destroyed, silk culture will be again restored in France and Southern Europe. A single silk-raiser, whose worms this year

will produce thirty-two thousand ounces of eggs, hopes next year to have a hundred thousand ounces, and the prospect of a profit of a million dollars! It should be remembered that this remarkable result is due primarily to the most minute researches upon microscopic plants by specialists, for the pure love of science. Their cloister studies, put to practical account, save the destruction of one of the largest agricultural interests in Southern Europe. In like manner had the government or individual states of America encouraged the entomologist and botanist in their studies, and caused them to be turned to practical account, we should not have had to give up the cultivation of wheat in the northernmost states, and our cotton crop could have been perhaps doubled, to say nothing of fruits and vegetables. Increased attention is paid now in England to economical zoology and botany. A botanist has recently been appointed to the Royal Agricultural Society, and an entomologist will soon be elected.

ON THE OCCURRENCE OF *SETOPHAGA PICTA* IN ARIZONA.—Lieut. Charles Bendire, U. S. A., stationed near Tucson, has communicated to Professor Baird the capture of the above-named species near that post. It was shot April 4th, 1872, and was found “running around the larger limbs of cottonwoods in search of larvæ and insects.” Its manners are stated to be “considerably like the *Certhiadæ*.”—ROBERT RIDGWAY.

ZOOLOGICAL NOMENCLATURE.—“In the President’s Address to the Entomological Society of London recently given by Mr. Wallace, one of the points most fully discussed is the rules of zoological nomenclature. These rules are undoubtedly of very considerable, though indirect, importance to science and it is not very satisfactory to find that great divergence of opinion as to what these rules are, or should be, still prevails amongst recent describers and cataloguers.

Some years ago I was entrusted by the Entomological Society with the task of preparing a synonymical catalogue of the Coleoptera of our islands, to be published under the auspices of the Society; my attention, therefore, has necessarily been directed to the questions under discussion in this matter, and I will here state the conclusions to which I have come.

1st. That a committee to frame and publish laws on zoological nomenclature is not to be desired. Such committee would have

no power whatever to enforce the laws it might make, and could not be expected to put an end to discussion on these points. The knot must be untied, not cut.

2nd. That the binomial system of nomenclature should not be arbitrarily considered to have commenced at any given date; but that recognisable names in all works in which this system is methodically employed should be used according to the rule of priority.

3rd. That it is not necessary to suppress a generic name in zoology because it has been previously used in botany (or *vice versâ*); but that it is much to be regretted that any generic name should thus be in double use, and it should always be made a matter of reproach to an author that he has committed an act of this nature.

4th. That names must be Latin to the extent that renders them capable of being written or used in scientific Latin; but that classical emendations beyond this are entirely inadmissible; no line except this can be drawn between emendation, alteration, and total suppression. The laws of classical languages have *per se*, no more right over scientific nomenclature than has the Hindoo language. As regards the much talked-of 'Amphionycha know-nothing,' it should be latinised in the simplest manner, as *Amphionycha knownothinga*; and I would further suggest that its barbarian author be well hissed whenever he ventures to show his face in a scientific assembly.

5th. That as regards placing an author's name after a species, the name so placed should always be that of the first describer of the species, not because he has any right in the matter, but as an additional means of certainty, and as a security against change.

6th. That the specific name is the name of an object, and therefore a noun, and should be changed in gender, or any other manner, when removed from one genus to another.

7th. That it is very undesirable to use the same specific name in two closely-allied genera; but that where this has been done already no alteration should be made till the names actually come into collision on account of the two genera being united as one genus. Surely to act otherwise is like cutting one's throat for fear somebody else should do it.

8th. That as regards placing an author's name after a genus, the name so placed should be that of the author who established the genus in the sense in which it is actually used. *Carabus* of

Linnaeus included all the insects now comprised in the family *Carabidæ*, at present divided into several hundreds of genera. To write, therefore, *Carabus* Linn., when we mean something entirely different, may be usual but is not desirable.

I may add, that I consider it useless to expect a perfectly stable zoological nomenclature, until zoology itself is complete and perfect; but that in order to reduce changes to a minimum, classical and other secondary claims must not be allowed any great importance."—D. SHARP, *in Nature*.

G E O L O G Y .

A NEW GENUS OF UNGULATES.—At a meeting of the American Philosophical Society, April 2nd, Prof. Cope stated that the largest mammal of the Eocene formations adjoining those of Wyoming, *i. e.*, of the Wahsatch group of Hayden, was the *Bathmodon radians* Cope, of about the size of Rhinocerus. It was an odd toed ungulate, with peculiar dental characters. The incisors were well developed above and below, as in the tapir, but the dental series was little interrupted. The crowns of the molars were all wider than long, and presented mixed characters. On the outer margin one only of the two usual crescents of Ruminants was present, but a tubercle represented the anterior one. The one which was present was very obliquely directed inwards. Inner crescents were represented by two angles, the posterior forming the inner angular margin of a flat table, the anterior a mere cingulum at its anterior base. The arrangement of these parts was stated to be of interest in connection with the relationships between the types of hoofed animals. The single outer crescent was a ruminant indication, while the inner table resembled the interior part of the crown of Titanotherium. It differed, however, in its early union with the outer margin, its edge being thus possibly homologous with the posterior transverse crest in *Rhinocerus*. The premolars had two or three lobes with crescentic section arranged transversely. He regarded the genus as allied to *Chalicotherium*. He stated that the mammalian fauna of Wyoming and Utah more nearly resembled that of the Paris Basin than any yet discovered in our country, and that it contained a still greater number of generalized mammalian forms. One of the most marked of these was the genus *Anchippodus* of Dr. Leidy.